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Forty preschool Negro children took part in a study to test the effect of oral response versus listening in improving the spoken language of disadvantaged children. It was hypothesized that children who echo and produce sentences in response to an instruction to select the appropriate picture to match a spoken sentence would show greater verbal skill than those children who only listened to the correct response. Transfer and retention of this verbal learning pattern (as well as the effect of structured teaching) was also tested in the study. A pretest-posttest design was used. As predicted, the 20 subjects in the verbal group scored higher on the posttest than the children in the listening group. Transfer of learning and rentention (as tested 5 weeks later) was also higher in the verbal group. IQ, measured by the Peabody Picture Vocabulary Test, also showed gains in this group. The structured program appeared to be a successful mode of instruction in increasing verbal learning. (MS)

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COMPARATIVE EFFECTIVENESS OF SPEAKING VERSUS LISTENING IN IMPROVING THE SPOKEN LANGUAGE OF DISADVANTAGED YOUNG CHILDREN[1]

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In recent years, language facility as a factor of success in school and in later vocational roles has become an important educational issue. Many children, described as the culturally disadvantaged, grow up with poor language habits in their homes and neighborhoods. If verbally restricted language is the result of living in a "noisy" environment, little verbal practice, and lack of responsive feedback, a structured language program in the preschool may significantly increase the child's verbal fluency. The "verbal bombardment" procedures used by Bereiter (1965), in which English is taught somewhat as a second language with pattern drills as in foreign language instruction demonstrate the feasibility of this approach.

The literature which examines the facilitating effects of the oral response with older children and adults includes studies reporting conflicting data. Using paired-associates as the learning task with adult subjects, Underwood (1964) found no differences under varying conditions of verbalization; however, Murray (1965) found vocalization to aid in memorization. In a study with grade school children, Kurtz and Hovland (1953) found recognition and recall of objects to be greater if the names of the objects were vocalized by the learners.

However, for very young children not yet adept at silent verbal mediation, the requirement of an oral response may definitely facilitate the development of a verbal learning set, as well as increase the acquisition of specific subject content. Wolf (1967) found an oral response fostered concept attainment with first graders. In a black-white discrimination task, Jeffrey (1953) found both motor and verbal responses were effective mediators, but the verbal response group was significantly superior to the motor response group. On a selective learning task with four and five year

old children, McNeany and Keislar (1966) found verbal labels produced improved performance with a two-day program. In his analysis of the process by which verbalization facilitates learning, Rosenbaum (1962) suggests that vocalizing directs the learner's attention to certain distinctive properties of the stimulus object.

To study the value of the oral response in beginning reading, an auto-instructional program was administered to 182 non-reading kindergarten children (McNeil and Keislar, 1963). One group looked at the words, the other group said the words out loud. The results showed that the oral responding group was superior on a test which called for the application of a variety of reading skills and which contained items that did not appear in the training program.

PURPOSE OF STUDY AND HYPOTHESES

The major objective of the present study was to test the effect of oral responding on young children's acquisition of standard sentence structures. It was hypothesized that four year old children who echo and produce sentences in a program: 1) will show greater verbal skill in producing similar sentences than children who only listen to the program, and 2) will show greater verbal skill in producing sentences on a transfer task as well as on a retention test, than children who only listen to the program. It was also hypothesized that four year old children given training in listening to or in echoing and producing certain sentence forms will continue to use those same forms with appropriate stimulus pictures even when they differ considerably from the ones used in training.

A secondary purpose of the investigation was to determine whether these young children could profit from a programed sequence containing

structured sentences.

METHOD

Subjects: The subjects were 40 Negro children from four day care centers in Los Angeles. There were 20 subjects in each treatment group, with an age range from 43 to 55 months. All children in the study were given the Peabody Picture Vocabulary Test and a pretest, and assigned on a stratified random basis to one of the two treatment groups.

Program Content and Materials: The program was developed by establishing five categories of sentences of increasing length and complexity. In Category 1, each sentence consisted of a subject, the verb "has" and an object. In Category 2, each sentence was comprised of a subject and a verb in the present progressive tense. In Category 3, each sentence was comprised of a subject, a verb in the present progressive tense, and an object. In Category 4, each sentence was comprised of a subject, the verb "is", a preposition, and an object. In Category 5, each sentence was comprised of a subject, a verb in the present progressive tense, and a prepositional phrase.

Each problem in the program contained three sentences. The three sentences were similiar except that each varied from the others by one or two parts of speech. Categories 1 through 4 had three possible variations each; Category 5 had seven ways in which the sentences could be varied. Table 1 gives examples of the type of sentences with some of the variations used in each sentence category.

TABLE 1.

Partial List of Categories of Sentences with Examples of Variations.

	Sentence Categories	Examples of sentence variations in one problem
I.	Subject - has - Object (subject and object varied)	The baby has a ball. The baby has a hat. The boy has a ball.
III.	Subject - progressive verb - object. (subject and verb varied)	The boy is throwing the ball. The girl is holding the ball. The boy is holding the ball.
V.	Subject - progressive verb - preposition - object of preposition. (verb and preposition varied)	The girl is kneeling on the chair. The girl is kneeling next to the chair. The girl is sitting on the chair.
	(preposition and object varied)	The man is looking under the box. The man is looking under the chair. The man is looking inside the box.

To illustrate each sentence, photographs were taken of six inch high bendable rubber figures. The dolls were placed with small objects in various positions. Pre-recorded tapes were used to provide control over quality of pronunciation and exposure time.

The total number of stimulus words included baby, boy, girl, man, woman, and dog and 25 toy objects. In addition there were 33 verbs and 16 prepositions.

A problem consisted of five frames. For the first frame, the subject heard a sentence on the tape recorder and was shown a picture. The second and third frames presented two more sentences with their accompanying pictures. For the fourth frame, a picture was shown which contained all of the pictures shown on the first three frames. This was a discrimination frame. The subject was asked: "Find the picture" followed by the same sentence as was used in frame one. This was followed by the instruction: "point to it." For the fifth frame, the picture was shown as used in frame

one and identified in frame four was repeated. Frames one and four acted as prompts for the oral response on frame five.

The differences between the Verbal and Listening groups were as follows: For the first three frames, the Verbal group heard the sentence once, then echoed it; the Listening group heard the sentence repeated twice. For Frame 5, the Verbal treatment produced a response to the request, "Tell me about the picture," while the Listening group heard: "I'll tell you about this picture," followed by the appropriate sentence.

The instruction extended over a period of five days and consisted of about 15 minutes training per day. There were from 13 to 18 problems in each day's program. Days 1 and 7 consisted of the tests on the unit. There were two experimenters who alternately gave the program and tests individually to each child. Five weeks after completion of the instructional program, a retention test was administered to the available children.

Criterion Tests

The pretest and posttest were identical in form, but used different pictures. Part 1 was a selection task consisting of 20 pages with three pictures on each page. The instructions were: "Find the picture," followed by a sentence that described one of the three pictures followed by "point to it." The E then pointed to the correct picture. Part 2 contained 20 single pictures and required a verbal response to each. The subject was asked: "Tell me about this picture." Of the 20 pictures, 10 appeared in Part 1 of that test, with the remaining 10 pictures new to the subject.

For the transfer task, the first item was a magazine picture in Which there were six bears in various poses on and around a tree. The instructions were: "Find," followed by a descriptive sentence, then "point

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to it." Most of the 10 sentences contained a preposition and a progressive verb. This one complex picture was followed by 20 other magazine pictures which portrayed different actions than those included in the instructional unit but to which similiar sentence forms could be used in describing each picture. The subject was asked: "Tell me about this picture."

The retention test was similiar to the posttest, except all pictures were different, including different magazine pictures for the transfer items.

Scoring of Tests: The selection items were scored 1 or 0. The verbal response items were scored on a scale ranging from 0 to 3 points. Three points were given for a completely correct sentence, two points for one error, or element missing, and one point for two errors, or two elements missing. A total of 80 points were possible.

RESULTS

The major analysis of interest compared the total posttest scores of the two groups by analysis of covariance using total pretest scores as covariate. The Verbal group obtained significantly higher scores than the Listening group. $F_{1,37}$ was 10.57, $p < .01$. The between group difference was due to the scores on the verbal subtest, as there was no significant difference between groups on the selection task. Means for the Listening group were: pretest, 47.4 S.D. 12.7; posttest, 59.0 S.D. 12.0. For the Verbal group the means were: pretest, 43.5 S.D. 11.5; posttest, 66.6, S.D. 9.0.

In support of Hypothesis 2, subjects in the verbal condition obtained significantly higher transfer test scores, $p < .01$. Out of a possible 70

points the means were 59.1 and 51.9 for the Verbal and Listening groups respectively. The second part of Hypothesis 2 was tentatively supported by data obtained from a retention test given five weeks after the posttest. Only 10 subjects in the listening treatment and six subjects in the verbal group were available. Although the sample was small, each subject's retention test score was very close to his posttest score. The trend was toward higher scores on the retention transfer test, significant $p < .05$ for the listening group but not significant for the verbal group.

The relationship of mental age and chronological age to test scores may be of interest in this study. Correlations of C.A. with test scores were low, from .00 to .30. This was expected, since the C.A. range was small. By contrast, the M.A. range was large, from 24 to 80 months. This particular IQ measure (the PPVT) did show significant correlations from .47 to .60, with scores on the verbal subtest. These findings are consonent with data from other studies which show fairly high correlations between verbal IQ measures and other verbal behavior.

Hypothesis three may be accepted as a result of two observations. 1) The scores on the verbal part of the transfer test were very close to those on the verbal part of the posttest. This indicated that subjects were producing as many complete and relevant sentences to new pictures, as they were to ones similiar to those on which they had been trained. 2) A subjective analysis of the sentences produced by the subjects on the transfer tests showed that all of the subjects attempted to produce sentences that followed the form of the ones with which they were trained.

For example, to a picture of a man brushing his teeth, the subjects said: "The man is brushing his teeth." No child said, "The man has a toothbrush." The action was described. To another picture a child said: "The dog is sitting on the -- what's that thing he's sitting on?" This seemed to demonstrate that he knew the correct form that was expected and produced every word he could.

Several features of the subjects' response patterns were noticed during administration of the program. Certain specific errors that subjects made, noticeable on the pretest, were self-corrected by many subjects in the verbal group. For example, several children said: "The boy have a cup." Over the course of echoing 12 similiar sentences, the "have" would change to "haves" and finally to"has." The corrected form appeared on the posttest and transfer test as well. Leaving out the auxillary verb "is" was common. This was often self-corected by subjects in the verbal condition.

DISCUSSION

The initial impetus for this study was to examine one means by which children, belonging to a population whose verbal ability is frequently low, may increase their facility with language. Children at this age imitate with ease. When asked to repeat a word, phrase, or sentence, they do so readily, even imitating the accent and intonation of the model.

By exposing the child to many similiar pictures, each with an accompanying sentence, the experimenter was indirectly saying to the child: "This is the kind of response I want you to make when I show you pictures like these." It was on the transfer pictures that the subjects aptly demonstrated that they understood these implicit instructions.

It is remarkable that four year old children would participate in a rather dull drill for 15 minutes at a time. Subjects in the verbal group may have paid greater attention to the sentence because they knew they had to echo it. Although less than Half of the subjects were available for a retention test, it is interesting to note that these children definitely performed as well on the retention tests, five weeks later, as they did on the posttests.

One goal of structured teaching in a classroom is to develop behavior that is acceptable in the classroom itself. One would not expect a child to use the same language or response patterns on the playground with his peers as in the classroom with adults. The question of transfer of learning has been labeled an important one regarding skills being developed with children. If transfer is to be expected, it should be within a situation in which that transfer is appropriate.

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